

REMARKS

Claims 22-38 are pending in the application.

Claims 22-28 are rejected under 35 U.S.C. 112.

Claims 22, 23, 28, 37 and 38 are rejected under 35 U.S.C. 102(e).

Claims 24-27 are rejected under 35 U.S.C. 103(a).

Claims 29-36 are allowed.

No new matter is added.

Applicants request reconsideration and allowance of the claims in light of the above amendments and following remarks.

Allowable Subject Matter

Applicants appreciate the allowance of claims 29-36.

Claim Rejections – 35 U.S.C. § 112

Claims 22-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Specifically, claim 22 is rejected because “it is not certain if the second active region is being towards the second isolation layer or if the bottom corner is being toward isolation layer” and suggested amendment “if the applicant intends for the bottom corner of the step region to be spaced towards the second isolation layer.” Applicants do intend for the bottom corner of the step region to be spaced towards the second isolation layer. This intent is manifested in the specification at FIGS. 12 and 13 and at page 8, lines 18-29 and page 10, lines 5-7, as well as at page 6, line 17-page 7, line 30 of Applicants’ response filed March 22, 2007. Applicants hereby amend claim 22 as suggested in the Office Action to expedite prosecution. Applicants respectfully submit that the present amendment to claim 22 is not the type that necessitates the issuance of a subsequent Final Office Action because claim 22 is amended pursuant to the amendment suggested in the present Office Action and, therefore, is amended to include features which should reasonably have been expected to be claimed. See M.P.E.P. §§ 706.07(a), 904.02 and 2173.02.

Claim Rejections – 35 U.S.C. § 102

Claims 22, 23, 28, 37 and 38 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,921,947 issued to Furuta, et al. (hereinafter “Furuta”). Applicants respectfully traverse this rejection.

Rejecting claim 22, the Office Action asserts that the claimed “step region” is shown in Furuta “in the left side and center isolation regions 2... [wherein e]ach step portion is formed in the center of the isolation regions and faces toward the high voltage gate insulation layer GX1.” Such a “step region,” however, is formed from a recessed surface of the isolation insulating film 2 to a top surface of the isolation insulating film 2 – not from a top surface of the gate oxide film GX1 to the top surface of the isolation insulating film 2. Because the “step region” of Furuta is not formed from a top surface of the gate oxide film GX1 to the top surface of the isolation insulating film 2, Furuta does not anticipate claim 22. See M.P.E.P. § 2131.

Even if the “step region” of Furuta could be interpreted as being formed from the top surface of the gate oxide film GX1 to the top surface of the isolation insulating film 2, Applicants respectfully submit the “center cut portions of the isolation layer that face towards the active region 5A” (surfaces of which “seem to be coplanar with the top surface of the gate insulation GX1”) do not represent the “bottom corner” of such a “step region.” Rather, the bottom corner of such a “step region” is below the upper edge corner of the channel implant region 5A. At best, the “center cut portions of the isolation layer that face towards the active region 5A” represent an intermediate corner that is below top and bottom corners of the “step region.” Because a “center cut... [portion] of the isolation layer that face[s] towards the active region 5A” does not represent a bottom corner of a step region formed from the top surface of the gate oxide film GX1 to the top surface of the isolation insulating film 2, and because the bottom corner of the step region formed the top surface of the gate oxide film GX1 to the top surface of the isolation insulating film 2 is below the upper edge corner of the channel implant region 5A, Furuta does not anticipate claim 22. See M.P.E.P. § 2131.

Further, Furuta does not provide any suggestion that a step portion formed from the top surface of gate oxide film GX1 to the top surface of the isolation insulating film 2, and having a bottom corner above the upper edge corner of the channel implant region 5A, would be obvious. In fact, Furuta discloses that recessed portions DP must be formed below the upper edge corner of the channel implant region 5A to reduce the occurrence of variation in threshold voltage of a

semiconductor device. See FIG. 1 and column 16, lines 40-47. Thus, any modification to Furuta that arrives at claim 22 would render Furuta unsatisfactory for its intended use and, therefore, would not be obvious. See M.P.E.P. § 2143.01(V).

The arguments presented above are substantively identical to the arguments presented in Applicants' response filed November 8, 2006, traversing the rejection of claim 22 as presented in the Office Action dated August 10, 2006. The arguments presented in Applicants' response filed November 8, 2006 were apparently persuasive in overcoming the rejection of claim 22 as presented in the Office Action dated August 10, 2006 because the rejection of claim 22 in the Office Action dated January 25, 2007 is significantly different from the rejection of claim 22 in the Office Action dated August 10, 2006.

Claims 23, 28 and 37 depend from claim 22 and, therefore, include all of the elements recited in claim 22. Accordingly, Applicants respectfully submit that Furuta fails to anticipate claims 23, 28 and 37 for at least the reasons presented above with respect to the rejection of claim 22.

Elements recited in claim 38 are similar to those recited in claim 22. Accordingly, arguments presented above with respect to the rejection of claim 22 are similarly applicable in traversing the rejection of claim 38.

Claim Rejections – 35 U.S.C. § 103

Claims 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furuta in view of U.S. Patent No. 6,642,105 issued to Kim (hereinafter "Kim"). Applicants respectfully traverse this rejection.

Claims 24-27 depend from claim 22 and, therefore, include all of the elements recited in claim 22. As established above, claim 22 is neither anticipated, nor rendered obvious, by Furuta. Kim does not supply any teaching which, when combined with Furuta, renders claim 22 obvious. Accordingly, Applicants submit that the combination of Furuta in view of Kim fails to render claims 24-27 obvious for at least the reasons given above with respect to the rejection of claim 22.

CONCLUSION

For the foregoing reasons, reconsideration and allowance of the pending claims of the application as amended is requested. The Examiner is encouraged to telephone the undersigned at (503) 222-3613 if it appears that an interview would be helpful in advancing the case.

Respectfully submitted,

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